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ABSTRACT

This program was designed to improve reading and mathematics achievement by directing intervention toward diagnosed deficiencies in these areas. Two thousand thirty-five students in grades one through nine participated in the reading component. Diagnostic-prescriptive teaching approaches were implemented in both components with an emphasis on small group instruction. Process evaluation was accomplished utilizing a rating scale during observation by the evaluator. Wide differences were noted among participating schools, with no consistent trends being observable. Quantitative evaluation was based on a pre/posttest design utilizing the Stanford Diagnostic Reading Test and the Stanford Diagnostic Math Test. Results of the Correlated "t" Test for the reading component indicated gains in auditory vocabulary and comprehension for all grades. At all grade levels the actual posttest means were higher than the predicted posttest means. Results of the Correlated "t" Test for the mathematics component indicated gains at both grade levels in concepts, computation, and problem solving. In all cases, actual posttest means exceeded predicted posttest means. Recommendations for future program implementation are made. (MK)

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FINAL EVALUATION REPORT

1978-79
District: #31

Project Title: P.S.E.N. Program

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Prepared by: Dr. Michael E. Knight

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Louis DeSario

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Community Superintendent

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EVALUATION OF P.S.E.N. PROGRAM
COMMUNITY SCHOOL DISTRICT 31, NEW YORK CITY

1978-79 SCHOOL YEAR

Prepared by: Dr. Michael E. Knight

I. INTRODUCTION

This program was designed to improve reading achievement and mathematics achievements by directing the intervention toward diagnosed deficiencies in these areas. These are the first and second priorities established by the State Department of Education.

Nineteen elementary schools, and eight intermediate and junior high schools participated in this program including the following: P.S. 13, P.S. 14, P.S. 16, P.S. 18, P.S. 19, P.S. 20, P.S. 22, P.S. 31, P.S. 36, P.S. 38, P.S. 39, P.S. 40, P.S. 41, P.S. 42, P.S. 44 P.S. 46, P.S. 52, P.S. 57, P.S. 60, J.H.S. 2, I.S. 7, I.S. 24, I.S. 27, I.S. 34, J.H.S. 49, I.S. 51, and I.S. 61.

Table I provides the participant figures for the evaluation of the Reading Component of the P.S.E.N. Program and Table II provides the participant figures for the evaluation of the Math Component of the program.

TABLE I

Participants in the P.S.E.N. Program - Reading

Grade	Enrollment
1	16
2	108
3	184
4	268
5	193
6	264
7	418
8	521
9	63
TOTAL	2035

TABLE II

Participants in the P.S.E.N. Program - Mathematics

Grade	Enrollment
4	11
5	32
TOTAL	43

II. EVALUATION DESIGN

Process Evaluation

Through analysis of records, observation of the program in operation by a qualified observer, interviews with project, district, and school personnel, the following evaluation procedures were conducted.

1. Determination of the extent to which the program was implemented.
2. Determination of the quality of the program implementation.

Product Evaluation

Reading Component

The Stanford Diagnostic Reading Test which was administered in October 1978 served as the pretest and the Stanford Diagnostic Reading Test which was administered in May 1979 served as the posttest.

Math Component

The Stanford Diagnostic Arithmetic Test which was administered in October 1978 served as the pretest and the Stanford Diagnostic Arithmetic Test which was administered in May 1979 served as the posttest.

All participants in each component receiving the pretest and posttest were included in the sample used for data analysis. The data were analyzed using Correlated "t" Tests (Historical Regression) with the level required for statistical significance set at .05.

III. PROGRAM IMPLEMENTATION

Staffing

All positions in the program were filled by personnel with the appropriate certification. Each of the schools had staff positions assigned to the P.S.E.N. Program by need. In several schools the positions were divided among two or more teachers in order to eliminate scheduling conflicts or to insure that the background of a teacher was matched with the needs of the students. An example of this took place in schools which implemented both the reading and math components.

Activities

The diagnostic-prescriptive approach was used in both components. At the inception of the program diagnostic procedures were instituted to identify the level at which each student was functioning. Student profiles were created and modified as the program continued using the diagnostic-prescriptive cycle as a continuous procedure.

Instruction took place in small groups, based on areas of weakness identified by the pupils' regular classroom teacher. The P.S.E.N. teacher in each school provided follow-up activities based on consultation with the classroom teacher. In most instances, the classroom teacher has identified specific

areas of weakness; i.e., poor phonic skills, poor comprehension, functioning at the pre-primer level, non-readers, poor vocabulary, poor word attack skills, poor visual or auditory skills, general achievement lower than standardized test scores.

Participants in the P.S.E.N. Program received remedial and corrective instruction at least three times a week. Those pupils most in need of supplementary instruction were programmed for daily supplemental instruction. The children received instruction in small groups of six to eight pupils.

The P.S.E.N. teachers were provided with the following data for each participant from the testing program. The pupils total reading and math scores plus the subtest scores:

Reading	Listening Vocabulary Reading Comprehension Word Study Skills
Math	Math Computation Math Concepts Problem Solving

An analysis of this information served as an indicator of the areas in which the participant required special emphasis. The P.S.E.N. teacher provided suitable instruction, remediation activities, and practice for mastery in accordance with the indicated need for reading and mathematics. In addition, the special skills of the P.S.E.N. teacher were utilized to provide personal growth in independent reading or math activities. The reading and mathematics activities were reflective of the instructional methodology and materials utilized by the classroom teacher.

There were three Guidance Counselors assigned to the P.S.E.N. Program in the following schools: P.S. 14, 57, 16, 31, 18 and 44. Each counselor serviced two schools. The counselors worked closely with the reading teacher

and with the eligible children who could benefit from this service. Without P.S.E.N. funds, this supportive service would not have been possible.

The target population was created primarily of holdovers, potential holdovers (transitional classes), and teacher referrals. Services included screening, assessments, identification of perceptual problems, referral to the school psychologist when appropriate, referral to other agencies when appropriate, and continual communication with parents. The counselors also intervened during crisis situations which took priority over other appointments.

Pupil Selection

Each elementary school identified those children eligible for P.S.E.N. instruction = 1.5 or more years below grade level in Reading and Mathematics. In the case of first grade children teacher recommendation was used. All schools submitted pupil rosters which indicated criteria used for determining degree of need; teacher recommendation, Informal Textbook Test (ITT) and standardized test scores. Program schedules were filed in the Office of the Superintendent for all teachers providing P.S.E.N. instruction in reading and mathematics. Efforts were made to meet both the reading and mathematics needs of all eligible pupils.

Staff Training

Workshops were held for the P.S.E.N. teachers by the district Reading Coordinator and the district Math Supervisor as well as on-going on-site assistance which was provided by all of the professional staff in the Superintendent's Office.

IV. PROGRAM EFFECTIVENESS

Process Evaluation

This component of the evaluation was accomplished with the use of a rating scale during observations by the evaluator. Twenty-three of the schools participating in the program were randomly selected for visitations. There were visitations to each of the schools selected and a total of 50 observations were complete. Average ratings of the observations are presented in Table III.

Examination of Table III indicates that there were wide differences among schools in all categories observed. Those categories related to independent work tended to receive higher ratings than the other categories, while questioning skills and curriculum integration were lower. No other consistent trends of either a positive or negative nature, were observed.

Product Evaluation

The quantitative analysis of this program was based on a pretest/posttest design. The participants received the Stanford Diagnostic Reading Test and the Stanford Diagnostic Mathematic Test which served as the pretests. The posttests were the same tests administered in the spring 1979. Historical regression and Correlated "t" Tests were used to predict posttest scores based on the students' previous achievement and to compare those predictions with actual performance.

The results of the Correlated "t" Tests for the Reading Component, along with the number of participants in the program, the pretest mean, the predicted posttest mean and the actual posttest mean, are presented in Table III.

TABLE II

Ratings of the P.S.E.N. Program

Number of Observations = 50	Distribution of Ratings in %				
	5	4	3	2	1
1. Suitability of available materials/equipment, direct instruction and independent activities.	16	48	26	10	
2. Availability of materials/equipment, direct instruction and independent activities.	22	44	34		
3. Sufficiency of materials/equipment, direct instruction and independent activities.	26	38	34	2	
4. Emphasis is on development of concepts and understanding.	16	46	32	6	
5. Experiences of children are drawn on.	20	50	26	6	
6. Nature of subject matter content suitable for the children in this program.	32	36	16	6	
7. Concepts and learnings are related to other areas of the curriculum.	22	44	32	4	
8. Oral language and thinking are encouraged through questioning.	18	36	40	6	
9. Emotional climate	42	34	20	4	
10. Independent groups and individuals are supervised.	56	30	12	2	
11. Activities appear well planned and organized.	34	38	26	2	
12. Provisions are made for follow-up to provide continuity.	32	40	22	6	

TABLE II - continued

	Distribution of Ratings in %				
	5	4	3	2	1
13. Attention given to individual children as well as total group.	40	46	12	2	
14. Children participate activiely in the lesson.	34	44	20	2	
15. A variety of grouping procedures are used.	36	48	14	4	
16. Independent activities are correlated with direct instruction in a particular skill area.	30	56	10	4	
17. Prescription is based on adequate diagnosis.	36	40	20	4	
18. Record keeping is efficient and thorough.	40	44	12	4	
19. A variety of learning modalities and experiences are used.	38	38	18	6	
20. General rating or quality of activity observed.	32	42	22	4	

Scale: 5 = Excellent; 4 = Very Good; 3 = Fair; 2 = Poor; 1 = Very Poor

Inspection of that table indicates that 12 of the grade level groupings attained statistical significance beyond the .05 level. It should be noted that the actual posttest exceeded the predicted posttest in all cases thus achieving practical significance. It seems apparent from these data that the goals set for this component have been achieved.

TABLE III

Mean Pretest and Posttest Scores on the
Stanford Diagnostic Reading Test and the Correlated "t" Test

Grade	N	Pretest Mean	Predicted Posttest	Posttest Mean	"t"
		Auditory Vocabulary Subtest			
1	16	0.55	1.10	1.49	2.09*
2	108	1.70	2.45	2.86	2.24*
3	184	2.49	3.22	3.62	2.18*
4	268	3.23	3.96	4.06	0.27
5	193	3.71	4.43	4.51	0.21
6	264	4.14	4.78	5.26	2.39*
7	418	5.11	5.84	6.32	2.44*
8	521	5.63	6.36	7.02	2.75*
9	63	6.20	6.91	7.19	0.92
		Comprehension Subtest			
1	16	0.47	0.95	1.11	1.46
2	108	1.61	2.33	2.48	1.01
3	184	2.53	3.26	3.49	1.96
4	268	3.03	3.74	4.19	2.08*
5	193	3.65	4.33	4.76	2.13*
6	264	3.75	4.40	5.06	2.57*
7	418	5.01	5.73	6.16	2.31*
8	521	5.46	6.24	6.68	2.15*
9	63	6.17	6.81	6.97	0.84

*Significant at the .05 level.

The results of the Correlated "t" Tests for the Mathematics Component, along with the number of participants in the program, the pretest mean, the

predicted posttest mean, and the actual posttest mean, are presented in Table IV. In this component all of the six groupings achieved statistical significance at the .05 level. Examination of these data indicate that the goals set for this component have been achieved.

TABLE IV

Mean Pretest and Posttest Scores on the
Standord Diagnostic Arithmetic Test and the Correlated "t" Test

Grade	N	Pretest Mean	Predicted Posttest	Posttest Mean	"t"
		Concepts Subtest			
4	11	3.03	3.74	4.37	2.96*
5	32	3.92	4.81	5.44	2.91*
		Computation Subtest			
4	11	3.14	3.91	4.41	2.41*
5	32	3.86	4.73	5.70	3.08*
		Problem Solving Subtest			
4	11	3.10	3.87	4.46	2.54*
5	32	3.95	4.98	5.79	3.01*

*Significant at the .05 level.

V. RECOMMENDATIONS

The following recommendations are submitted for consideration by the Community School District.

1. The program should be recycled.
2. A coordinator should be appointed for purposes of planning and supervision of the program.

3. In-service training should be expanded and spaced throughout the year.
4. Teachers should be encouraged to increase the amount of time spent on individualized activities.
5. Teachers should be encouraged to make greater use of manipulative materials. Funds should be included for this purpose.
6. Program personnel should understand the necessity of establishing clearly understood procedures for the children to follow, i.e., record keeping, self-checking, and returning materials.
7. The testing component should emphasize the use of test results for diagnostic purposes.
8. Methods and materials used during regular classroom activities should not be duplicated in this program due to the apparent lack of interest and motivation they cause.